A. HOTCHKISS.

Car-Track Clearer.

No. 18,903. Patented Dec. 22, 1857.

Fig. 1.

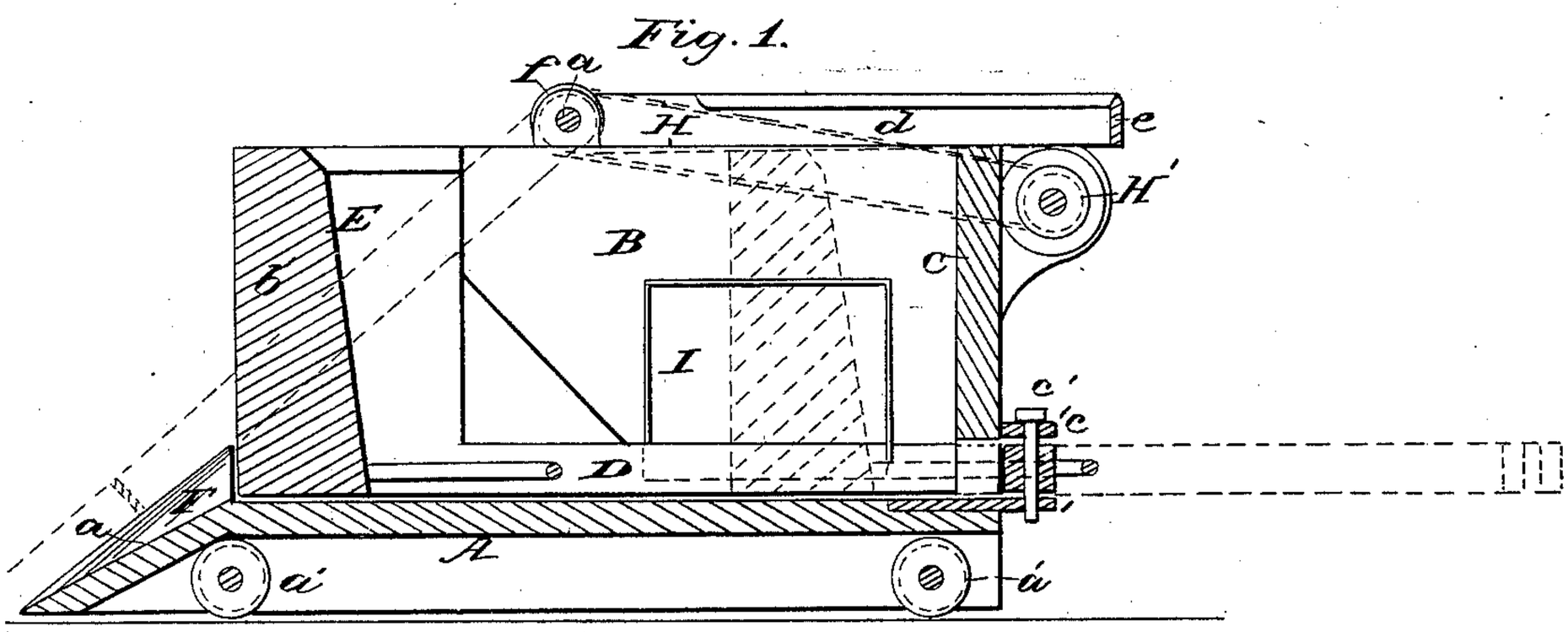
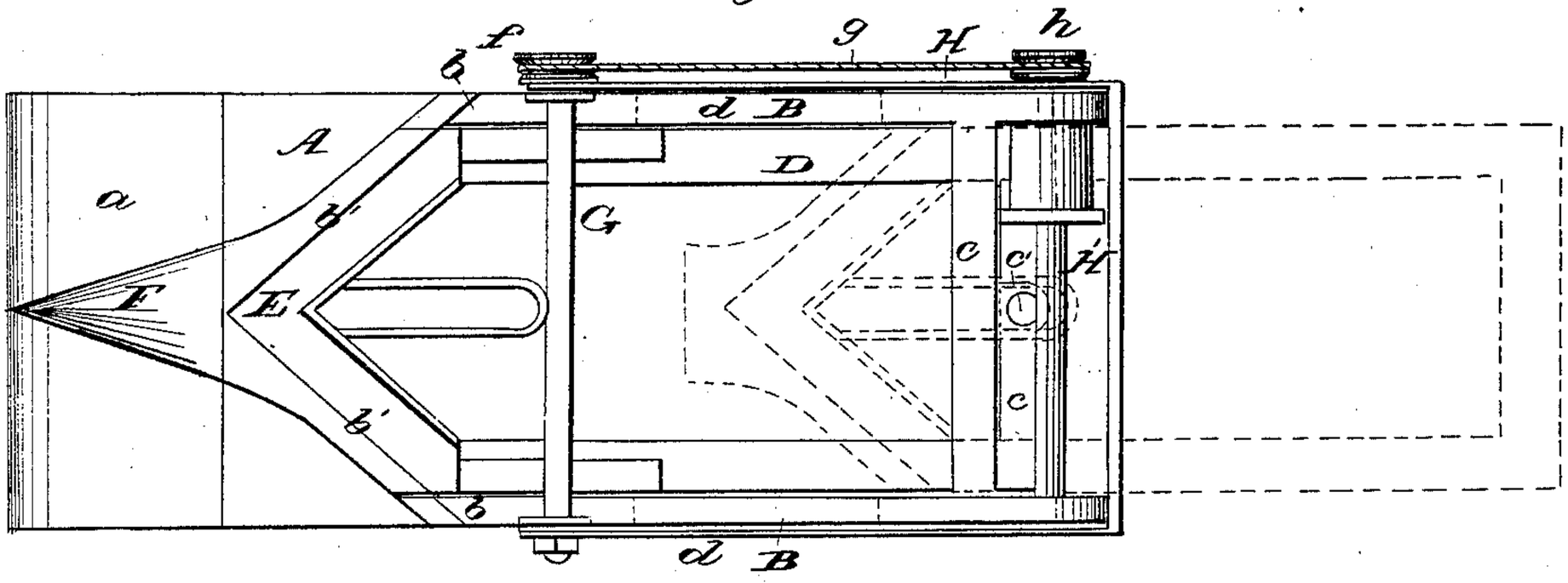


Fig: 2



UNITED STATES PATENT OFFICE.

ANDREW HOTCHKISS, OF SHARON VALLEY, CONNECTICUT.

RAILROAD SNOW-PLOW.

Specification of Letters Patent No. 18,903, dated December 22, 1857.

To all whom it may concern:

Be it known that I, ANDREW HOTCHKISS, of Sharon Valley, in the county of Litchfield and State of Connecticut, have invented a new and Improved Snow-Plow for Railroads; and I do hereby declare that the following is a full, clear, and exact description of the same, reference being had to the annexed drawings, making a part of this specification, in which—

Figure 1 is a longitudinal central section of my improvement. Fig. 2 is a plan or top view of my improvement.

Similar letters of reference indicate corresponding parts in the two figures.

This invention consists in a novel construction of the plow, whereby the same may be used both in light and deep snows, and be made to operate effectually in either case, and also used as an excavater in deep drifts.

To enable those skilled in the art to fully understand and construct my invention I will proceed to describe it.

A represents the bottom or base of the plow which is of rectangular form and has its front end inclined so as to form a share as shown at (*a*). This base may be constructed of metal or wood and it is placed on wheels (*a'*) of the usual form and arranged in the ordinary way.

B, B are two side pieces which are attached to the base A, said side pieces extending upward a suitable height. A back-piece C is also attached to the base A. The side and back pieces form a sort of box on the base A. The side pieces B, B do not extend the whole length of the base A, they terminate a short distance before reaching the inclined front surface (*a*) at the base. The front edges of the side pieces B are beveled on their outer sides, as shown at (*b*) Fig. 2, so as to form sharp or cutting edges.

D represents a rectangular frame which is fitted between the two side pieces B B, and rests upon the base A. The side pieces of this frame pass through the lower end of the back piece C the cross piece of the frame being at the outer side of the back piece. To the front end of the frame D a share E is attached. This share is formed of two oblique sides (*b'*) (*b'*) placed relatively with each other so as to be of V-form. These sides extend as high as the side pieces B, and their back edges will pass between said side pieces B B. The frame D, and share E, constitute a plunger for forcing out or unloading the snow, as will shortly be described.

When the share E is shoved forward to its fullest extent its lower end bears against or is in contact with a stop F on the inclined front surface (*a*) of the base A. This stop is of semi-conical form, and also serves as a depleter to a certain extent.

I would remark that the front edge of the side pieces B B may be somewhat inclined from a vertical line, the lower ends being nearer the front of the base A than the upper ends and the edges of the share E are made to correspond inwardly with the inclination of the front edges of the side pieces B B.

G is a shaft which is fitted in proper bearings on the upper surfaces or edges of the side pieces B, B. To this shaft a rectangular frame H is attached. This frame is a cutting device the two side bars (*d*) (*d*) as well as the outer cross piece (*e*) having their lower edges beveled as shown in Fig. 1. To one end of the shaft G a pulley (*f*) is attached, and a cord or chain (*g*) passes around said pulley and also around a pulley (*h*) on a shaft H', at the back end of the device.

In each side piece B there is placed a door I. These doors are hinged at their lower ends and open outward.

The operation is as follows:—When the frame H is thrown back and the share E is moved forward against the stop F, as shown in both figures, a plow similar to the usual or common ones is obtained, the inclined portion (*a*) of the base A, the stop F, and share E serving to scoop up and throw the snow at either side of the track. The plow thus arranged will answer perfectly well in light snows or those of not much depth. When however it is necessary to cut through deep drifts the share E is drawn back against the back piece C as shown in red Fig. 2—and the plow is moved along until the box or the space between the side pieces B, B, is filled with snow. The frame H by turning the shaft H', is moved over or around until the end piece (*e*) strikes the stop F, and the snow in front of the plow is cut, a square cake being within the box on the base. The snow plow is then "backed" a requisite distance and the snow forced out from the box by shoving forward the plun-

ger composed of the frame D, and share E. This operation is repeated until the drift is completely cut through.

Boxes behind snow-plows, to receive the snow, I am aware are old; and I do not claim to be the first inventor thereof. Nor do I claim to be the first to use a snow-plow having two sets of shares, one set being capable of being removed. But to the best of my knowledge and belief, it is new to employ a plunger composed of the frame D, and share E, so arranged as to be drawn back to the rear part of the machine, while the box is being packed with snow, the said plunger to be afterward forced forward by the engine, to unload the snow.

I would remark that when the share E is secured at the front edges of the side pieces B, B, it is retained in said position by a bolt or pin (c') which passes through the end piece (c) of the frame D and through plates (l) (l) attached to the back piece C and base A, see Fig. 1. I would also remark that the doors I are for the purpose of allowing the snow to pass out when the plow E is drawn back, for in certain cases it may be preferable as in light snows or in those of medium depth to have the plow B drawn back and the snow pass up the inclined surface (a) of the base into the box, and out through the doors I, I, the snow being deflected through the doors by the share E.

The advantage of my plow over others is in so constructing it as to have it placed inside of a common house or freight car, which has its front end and top open, so that the machine may be placed in front of the locomotive and serve as an ordinary plow in light snows. But for cutting through heavy drifts which an ordinary plow will not penetrate, I place my plunger composed of share E, and frame D, in the rear of the house-car, and run the car into the drifted snow until it is full. Then by the cutting device, I cut the snow off, leaving the car full in front of the plow; then backing out, I take the snow where it can be disposed of; and finally, loosening the coupling and running the plow forward, the snow is all unloaded. My plow is superior to others, in its simplicity of construction, being easily changed from an ordinary plow to an excavator, carrying heavy loads, and loading and unloading itself by means of the engine alone.

Having thus described my invention, what I claim, and desire to secure by Letters-Patent, is:

1. The employment of a plunger, composed substantially of a frame D, and share E, which is moved back out of the way when the machine is driven into the snow to receive a load, but which may be pushed forward to force out the snow when unloading; the whole constituting a snow plow and excavator capable of being directly loaded and unloaded by the force of the locomotive.

2. The combination of the cutting frame H, with the frame B, as described, so that after the machine has been run into the drift and filled, the cutting frame H may be swung over in front, and made to cut down through the snow; thus completely detaching that portion contained in the machine from the main body of the drift.

ANDREW HOTCHKISS.

Witnesses:

CHAS. F. SEDGWICK,

MINNIE SEDGWICK.